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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,715	12/18/2001	Masahiro Kodama	P/1071-1513	2113

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Edward A. Meilman
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
1177 Avenue of the Americas
41st Floor
NEW YORK, NY 10036-2714

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/022,715	KODAMA ET AL.	
	Examiner	Art Unit	
	Karl D Easthom	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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1. Please note that the IDS filed 10/7/03 has the Korean Office Action, and the Examiner has considered the references therein, and here supplies a copy of the abstracts thereto, which disclose capacitors (not semiconductors as claimed) , but the list of references Form 1449 was not imaged with the file, or applicant neglected to send same. The examiner guesses that the IDS form 1449 was sent, but was not imaged. Further, the first Form 892 sent with the OA of 3/6/03 is also are missing from the image file. None of this is any fault of the applicant, but appears to be a problem with the USPTO image process. If applicant could please send a new form 1449 and a copy of the Form 892 from the first office action of 3/6/03, it would be appreciated.

Please accept the apology of the Examiner for the inconvenience.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niimi et al. in view of either Furukawa et al. or Kitsui et al. (JP200-106304), and further in view of Ogose et al. Niimi discloses the claimed invention at Fig. 1 and par. 21 except the glass covering. Furukawa discloses a glass diffused covering 13 for thermistors in general at Fig. 3. Furukawa

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discloses that such a covering is needed to protect the chip at col. 1, lines 5-25. Similarly, Kitsui at the abstract discloses in general a chip thermistor such as that of Furukawa having diffused glass 7 on the thermistor surfaces to protect it. Ogoose discloses employing a glass -- coating for a barium titanate capacitor at pars. 1-7 to fill up the pores and to thus prevent humidity from entering and to prevent degradation. And as applicant admits, "the surface of ceramic electronic components is conventionally coated with a ...glass to form a protective layer in order to maintain moisture, heat or weather resistance" --page 7 of the 12/3/03 remarks. It would have been obvious in view of Furukawa and Ogoose to employ a glass covering in the device of Niimi et al. in order to prevent the device from deteriorating as suggested, where Niimi discloses having a porous article.¹ For claim 1, Niimi discloses the relative density at the abstract. For claims 3, 6, 11, 16, and 17, the melting point of 650 degrees is at par. 21. of Ogoose, useful in order to raise the moisture resistance at par. 11. The stack of claims 4, 9 and 14 is at Fig. 1. The covering/impregnation of claims 1-2, 5, 8, 10, 12-13 and 15 is provided by the secondary art as noted above. For claims 7, and 12, claim 1 of Niimi claims no sintering

¹It is well known that barium titanate capacitors and resistors or semiconductors differ only in that the barium site of the former is doped to obtain the latter, suggesting the compatibility of the two types of electronic devices. For evidence of this - see col. 1, lines 23-31 of Sasaki et al, or see Purdes et al. at col. 1. Further, it is well known that pores are filled in order to coat resistors, see Bockstie, Jr. at col. 1, lines 40-50, and that a certain porosity must be present, which means that the density must be low enough, in order to fill the pores, see Quirk at col. 3, lines 35-45. Added motivation is here supplied from the prior art of record.

agent, so that the intent of the inventor is not to require a sintering agent, so that lack of a sintering agent is disclosed where a claim is considered a disclosure. As an alternative, it would have been obvious not to employ one where none is claimed by Niimi because it is not required by the inventor as an important element.

5. Claims 1-2, 4-5, 7-10, and 12-15 are rejected under 35 U.S.C. 102(b) as anticipated by Kumada et al. or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kumada in view of Niimi et al. Kumada discloses the claimed invention at Figs. 1, 4 and 5, with glass layer 25 on a surface, and electrodes 24, 21, 22, with barium titanate at col. 6. The component is impregnated since the component has glass inside of it, whether or not there is diffusion. Or as an alternative, the glass layers 25 are impregnated where they are fired under pressure and temperature at col. 6, lines 48-60. That is, inherently the glass is impregnated since there is pressure and temperature, according to applicant's specification, and bonding would not occur where there is no diffusion. Adhesion requires an amount of diffusion. The term about 90% is met since there is no disclosure of the barium titanate being a perfect crystal, and Niimi discloses same is required as noted above. As an alternative, it would have obvious in view of Niimi to employ that density for the purpose of forming a PTC device having excellent characteristics as disclosed at par. 20 thereof, said density allowing glass to impregnate. For claims 7, 12, no sintering agent is disclosed in Kumada. Alternatively, it would have been obvious in view of Niimi not to employ it where the amount is minimal -.001 at par. 26, and Niimi claim 1 does not require it, suggesting it is not required.

6. Applicant's arguments filed 12/03/03 have been fully considered but they are not persuasive or are moot. The Ogoose in view of Quirk rejection is removed for lack of the

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semiconductor element. With respect to Niimi, applicant argues that there is no motivation to combine Niimi with Furkawa and Ogose, because even though all are barium titanate ceramics, one is a thermistor one is a capacitor and one is a thermistor. This is not persuasive because the field is the art of glass coverings for ceramic electronic components. And as applicant admits, “the surface of ceramic electronic components is conventionally coated with a ...glass to form a protective layer in order to maintain moisture, heat or weather resistance” –page 7 of the 12/3/03 remarks. Ogose provides motivation by disclosing a glass coating for a barium titanate ceramic component to fill up the pores and to thus prevent humidity from entering and to prevent degradation. The added motivation in the footnote is not required, but evidences the fact that all the components have similar compositions. That applicant has solved a particular problem of withstand voltage is not germane where there is motivation for the combination as noted.

Applicant states that silence is an inadequate disclosure form which to draw obviousness, but no obviousness need be drawn since Niimi is the primary reference and lacks a sintering agent in claim 1. That is, the lack of the element is not is not mere silence, it is evidence of the lack of requirement of the element in the Niimi invention. The unexpected results alleged do not compare the lack of the sintering agent to a finite very small amounts such as the closest prior art of Niimi of .001, so that the scope of any unexpected results is broader than the showing.


Further, in the alternative, the lack of the sintering agent in Niimi is disclosed in claim 1 when taken in conjunction with the small amount disclosed so that the obviousness question may be one that need not be addressed. Applicant compares amounts from 5 to 13 times the Niimi amount, so that the scope of his claim is not commensurate in scope with any unexpected results.

As to Kumada, applicant argues that 25 is an insulating layer and not a glass layer. The layer is

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both as cols. 6-7 make clear where the insulating layer is the printed glass frit paste, see col. 7, lines 15-21, col. 6, lines 55-60. The Examiner did not intend to refer to the ohmic metal paste as a glass frit. There is only one insulating layer disclosed, and it is a glass frit paste. "Ohmic silver paste and glass frit paste were screen-printed on one surface of each plate members....to provide a conductor layer and an insulating layer respectively" – col. 6, lines 50-65. Thus, the component is impregnated since the component has glass inside of the laminated areas, whether or not there is diffusion. As to the lack of inherency where the Examiner also alleged diffusion as a type of impregnation, adhesion requires an amount of diffusion and is evidence thereof. Also, since there is some pressure and higher temperature, there necessarily is some diffusion, however slight. Applicant argues that impregnation requires more than surface diffusion but this is not correct according to the normal use of the word and such a definition renders the scope of the claim as so close to the art as to read on it.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



KARL D. EASTHOM
PRIMARY EXAMINER